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REMARKS

The undersigned attorney thanks Examiner Blau for his careful review of this patent application. Prior to entry of this amendment, claims 18 - 23 were pending in the application. Claim 18 has been amended. Upon entry of this amendment, claims 18 - 23 will be pending.

Priority

In paragraph 1, the Office Action alleges that the present application, which was filed under 37 C.F.R. §1.60 lacks the necessary reference to the prior application. Specifically, the Office Action alleges that the current status of all non-provisional parent application referenced should be included. The priority claim has been amended accordingly.

Information Disclosure Statement

In paragraph 2, the Office Action asserted that the Japanese document 5-27951 was not the correct document number since what was disclosed did not seem related as well as the publication date of the Japanese document did not match that shown on the supplied Information Disclosure Statement form PTO/1449.

The Japanese reference 5-27951 was published in the Japanese Patent Office Utility Model Publication Gazette under Utility Model Publication No. 5-27951 on July 16, 1993 and discloses a cavity-back iron golf club head with an undercut surface in the cavity. The publication number and the date of publication for the Japanese reference were correctly listed on form PTO/1449. Although the Office Action stated that the Japanese reference 5-27951 did appear to be related to the current application, the Japanese reference 5-27951 was cited by the Applicant to meet their obligation under 35 C.F.R. §1.56 to disclose to the Office all information known to them to be material to patentability. Because the cited Japanese reference is directed to the same field of invention as the claimed invention, namely cavity-back iron golf club heads, it is respectfully submitted that the citation of the Japanese reference 5-27951 was both proper and listed correctly.

New Claims 18 – 23 Are Not Rendered Obvious in View of The Cited References

In paragraph 3, the Office Action rejected claims 18 - 22 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,330,187 to Schmidt (hereinafter "*Schmidt*") in view of

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Great Britain published patent application No. 2,331,249 to Kosmatka (herein "*Kosmatka*"). The Office Action alleges that *Schmidt* discloses a projected wall portion offset from a face portion and extending upward from a sole portion and having a length along an axis from the toe to the heel that is less than a length of the cavity portion along an axis in the form of slots ending the length of the wall, and the wall portion rising along the face portion toward a top edge portion, where the wall portion is trapezoidal in shape.

The Office Action then admits that *Schmidt* lacks a thickness of a ball hitting portion in the face portion is made greater than the thickness of the top edge side portion of the face portion located between the ball hitting portion and the top edge portion and at least as thick as a thickness of the sole side portion of the face portion that is located between the ball hitting portion and the sole portion and that extends along the groove. The Office Action further admits that *Schmidt* did not disclose that the thickness of the ball hitting portion is made greater than a thickness of a toe side portion of the face portion. The Office Action further admits that *Schmidt* does not describe that the toe side portion includes a first region located on the top edge portion side and a second region located on the sole portion side, and the heel side portion includes a third region located on the top edge portion side and a fourth region located on the sole portion, such that the thickness of the first region is made smaller than the thickness of the second region, and the thickness of the third region is made smaller than a thickness of the fourth region.

The Office Action then alleges that *Kosmatka* discloses a golf club that has a ball hitting portion having a thickness that is greater in the face portion than the thickness of the face portion near the top edge and at least as thick as the thickness of a sole side portion of the face portion located between the ball hitting portion and the sole portion that extends along a groove in the form of a head being able to hit a ball on the face. The Office Action further alleges that *Kosmatka* further discloses that the golf in which the thickness of the ball hitting portion is greater than both the thickness of the toe side portion and the heel side portion. The Office Action then alleges that it would have been obvious to modify the golf club head described by *Schmidt* with the weight distribution described by *Kosmatka* to achieve the golf club head described by claim 18 in order to design a rear face assigning a thickness to each area of the face according to a magnitude of internal stress expected to be experienced by each area when a force is applied to striking a ball by a club front face is experienced and assigning a greater thickness in areas where the stress is greater and a lesser thickness in areas where the stress is less. It is

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respectfully submitted that the invention of claim 18 is not obvious in view of *Schmidt* or *Kosmatka*, either individually or in combination.

Schmidt describes a cavity-back iron golf club that has two intersecting recess projecting to the rear proximate to the periphery of the face portion to define a front wall. The two recess include a forwardly and rearwardly extending main recess and an undercut recess located directly rearwardly of the front wall and extending laterally outward from the forward most extent of the main recess toward *at least two areas*, including the top wall, the bottom wall or sole, the toe region, and the heel region. Typically, the undercut recess portions associated with the walls are elongated directionally between the toe and heel portions, over the major length of the iron golf club head. This redistributes metal toward *both the upper and lower peripheries* of the head and projecting rearwardly to enhance the anti-twist of the golf club. The undercuts on both the top and bottom periphery are believed to achieve a delayed momentum transfer from the wall portions to the front wall and face.

Kosmatka describes an iron golf club head that has a contoured back surface that has varying thicknesses such that the regions of the face that are expected to experience the highest levels of internal loads are thickest, while those areas that are expected to experience the lowest levels of internal loads are thinnest. The contoured back surface contains a number of regions of varying thicknesses such that the club face generally thins out at the face/top wall intersection region approaching the toe and the face/top wall intersection region approaching the heel. In general the contoured regions follow along a vertical stiffening region and a horizontal stiffening region, which approximate an upside down "T" such that the cross bar of the "T" lies along the face/bottom wall intersection region and the upright leg or the "T" lies along the central vertical axis.

The invention of amended claim 18, on the other hand describes an iron golf club head having a cavity portion, a face portion, and a sole portion. The sole portion includes a groove oriented parallel to the face portion that extends along the sole portion within a cavity portion. Additionally, the head contains only a single projected wall portion that extends upwardly from the sole portion and has length along an axis extending from the heel of the golf club to the toe of the golf club, which is less than the length of the cavity portion along the same axis. Also, the ball-hitting portion of the clubface is greater than the thickness of the top edge side portion of the clubface located between the ball hitting portion and the top edge portion of the iron head.

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Additionally, the ball-hitting portion is at least as thick as the sole side portion of the clubface, which is located between the ball hitting portion and the sole and that extends along said groove.

Each and every element of the claimed invention, and well as a motivation or suggestion to combine the elements, must be found in the references to establish a *prima facie* case of obviousness. MPEP §2142. Neither *Schmidt* nor *Kosmatka* describe, teach, or suggest an iron golf club head that contains a single projected wall portion extending upwardly from the sole portion and has a length that is less than the length of the cavity. Although *Schmidt* describes a cavity-back iron golf club that has an undercut recess, the golf club described by *Schmidt* requires *two recesses*: a forwardly and rearwardly extending main recess and an undercut recess located directly rearwardly of the front wall. Furthermore, the undercut recess must extend laterally outwardly from the forward most extent of the main recess *toward at least two* of the following: i) the top wall; ii) the bottom wall or sole; iii) the toe region; and iv) the heel region. Because the undercut recess extends laterally outwardly from the main recess, it pushes some of the metal from the iron golf club out from the main cavity, which forms a rearwardly projection. Since the undercut recess must extend laterally outwardly *toward at least two* portions of the cavity, the undercut recess forms at least two rearwardly projections.

However, as shown in the figures and described in the specification of *Schmidt*, the undercut recess is intended to preferably define a loop that extends around the perimeter of the cavity. In this manner, the rearward projections formed at the top wall, the bottom wall, the toe region, and the side regions form a continuous wall around the cavity. Although FIG. 17 illustrates that the slots may be provided proximate to the corners of the loop defined by the rearward projections, FIG. 17 still illustrates that there must be at least two rearward projections, and more preferably four rearward projections around the perimeter of the cavity. In contrast, the iron golf club head of amended claim 18 has *only a single projected wall portion* that extends upward from the sole. Therefore, each and every element of amended claim 18 is not described, taught, or suggested by the cited references either separately or in combination.

Furthermore, there is no motivation to combine the references since *Schmidt* teaches away from the invention of amended claim 18. Rather, the references teach away from the claimed invention. The benefit disclosed by *Schmidt* is that the undercut cavity extend laterally outwardly from the forward most extent of the main recess toward at least two sections of the cavity perimeter reduces anti-twisting of the head during the striking of a golf ball. The

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distribution of weight on at least the top and bottom and/or the toe portion and the heel portion provides a somewhat delayed momentum transfer from the rearward projections to the front wall and front face by allowing the forward momentum to be transferred as a forward wave to pass around and through the rearwardly projections, thereby achieving an enlarged sweet spot without increasing the vertical dimensions of the iron golf club head. If the iron golf club described by *Schmidt* contained only a single rearwardly projection, the desired benefit of enlarging the sweet spot without increasing the vertical dimensions of the iron golf club head could not be achieved.

In contrast, the purpose of the single projected wall portion as required by claim 18 is not to enlarge the sweet spot as described by *Schmidt*, but rather to move as much of the club's weight down and away from the face portion to increase the centroid depth. Placing more than one projected wall portion on the iron golf club of claim 1 would similarly defeat the stated purpose of increasing the centroid depth, since placing additional weight on either the top of the cavity, the heel portion, or the toe portion would have the undesirable effect of raising the centroid depth of the iron golf club. Therefore, since the stated purpose of providing the undercut channel would not be achieved if it extended to less than at least two directions of the cavity perimeter, there motivation to combine the references.

Moreover, even if one were to combine the contour design within the cavity described *Kosmarka* with the dual cavity design described by *Schmidt*, the resulting invention would not be the iron golf club head containing a single extended wall portion. Rather, the resulting invention would be an iron golf club head that would contain several contoured weight regions, such that the contoured regions follow along a vertical stiffening region and a horizontal stiffening region, which approximate an upside down "T" and has a dual recesses consisting of a main recess and a undercut recess located directly behind the front wall and extends laterally outwardly from the main recess toward at least two of the following section of the golf club head: i) the top wall; ii) the wall or side; iii) the toe region; and iv) the heel region. Since the resulting invention fails to describe, teach, or suggest an iron golf club head that includes only a single projected wall portion offset from the face portion.

Because none of the references describe, teach, or suggest a cavity back golf club head iron head that has only a single projected wall portion offset from the face portion, wherein the length of the projected wall portion along an axis extending from the heel of the golf club to the toe of the golf club is less than the cavity portion along the same axis, and because the references

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fail to describe, teach, or suggest any motivation to combine the references in the way suggested by the Office Action, claim 18 is patentable over the cited references. Therefore, it is respectfully requested that the rejection of claim 18 be withdrawn.

The foregoing arguments apply to claims 19 -23, which depend upon claim 18 and are also patentable over the cited references. It is respectfully requested that the rejection of these claims be withdrawn.

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CONCLUSION

It is respectfully submitted that claims 18 - 23 are in condition for allowance and that each point raised in the Official Action with regard to these claims has been fully addressed. Therefore, it is respectfully requested that the rejections to claims 18 - 23 be withdrawn and that claims 18 - 23 be processed to issuance in accordance with Patent Office Business.

If the Examiner believes that there are any issues that can be resolved by a telephone conference, or that there are any informalities that can be corrected by an Examiner's amendment, please contact John Briski at 404.885.3141.

Respectfully submitted,

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